DSI Mission

• To achieve recognized excellence in research and education in the interdisciplinary field of data science.

• Competitive Advantage: An institute that crosses disciplines, departments, schools and colleges to leverage the combined understanding of multiple disciplines to meet the challenges of big data.

www.dsi.virgina.edu
Data Science Institute
Recent Activities

• Education
• Faculty Excellence & Recruiting
• Research
• Industrial Relationships
M.S. in Data Science

• Our M.S. program will prepare a new generation of data scientists to address the broadly identified, interdisciplinary challenges of big data

• Through integrated data exercises in our core courses our students will gain knowledge of data science fundamentals & applications

• Courses in the practice, ethics, law & policy of data science will provide the foundations for a career

• In the capstone experience students work on team projects that reinforce fundamental principles and the broader uses and impacts of data science
M.S. in Data Science Status

- M.S. in Data Science unanimously approved by the Faculty Senate on Dec 4, 2013
- 88 applicants as of Jan 15, 2014
  - 13% VA residents, with others from U Chicago, Penn State, Rochester, Illinois, VA Tech, Washington, Tufts, Maryland, Michigan, Wisconsin, Alabama
  - 78% international
  - Average GRE Quantitative = 166.6 (95th percentile), Average GRE Verbal = 152.0 (53rd percentile)
  - Average GPA 3.4
  - 15% of applicants are current UVA students or alums
  - Undergraduate majors include Economics, Math, Statistics, Computer Science, Biology, and Engineering
- Developed a revenue model to sustain the program
- Developed the M.S. proposal for SCHEV
Other Educational Programs

• Tailored minor in data science
  – 4 Core courses
  – 2 Major directed courses
• Executive Data Science program
  – Project-based coaching
  – Team exercises
  – Spiral learning framework
• Competition: U.C. Berkeley, Harvard, Duke
Faculty Excellence & Recruiting

- Faculty searches
  - 12 in CLAS
  - 3 in SEAS
- CLAS priority hires
  - Karen Kafadar, Department Chair in Statistics
  - Denis Nekipelov, Econometrics of digitization/IT

- Symposia
  - New Machine Learning Approaches to Modeling Dynamical Systems
  - Big Data, Advanced Analytics, and Driving Better Decision-making at Procter & Gamble
  - Topological and Bayesian Methods in Data Science
  - Mechanism Design and Economic Inference
Research Proposals

• Proposals
  – NIH: Centers of Excellence for Big Data Computing in the Biomedical Sciences (U54)
  – NIH: Predictive monitoring for sepsis in surgical intensive care (RO1)
  – Naval Air Warfare Center Aircraft Division (NAWCAD) with ARI
  – NSF: Materials Genome in progress
  – 3 More NIH proposals in progress

• Jefferson Trust
  – 12 Preliminary interdisciplinary proposals

• Jeffress Trust
  – Selected 4 proposals for submission
Research Infrastructure Support

• **New Centers**
  – Center for Data Ethics, Law and Policy
  – Center for Automata Computing
  – Center for Motion Capture
  – Center for Complex Systems Modeling

• **Computational Infrastructure**
  – HPC with 5k cores
  – Private cloud for identified data
Industrial Relations

- **Capital One**
  - Support for M.S. program through data provisioning and guest lectures
  - Possible internships

- **Mitre**
  - Support for the private cloud initiative
  - Support for M.S. program through data provisioning and guest lectures
  - Possible internships
  - Co-development of elements of the private cloud

- **IBM**
  - InfoSphere Streams in clinical research
  - Opportunities for joint research at the Almaden center
Industrial Relations

• Facebook
  – Possible internships

• Amazon
  – Class support
  – Possible use of instructional materials

• Verisk
  – Data exchange and research collaborations
Industrial Relations

• Hamilton Beach
  – Student projects

• Proctor and Gamble
  – Speaker exchange

• Two Sigma Investments
  – Guest lectures & support for the minor program

• Charlottesville Data Science Meet-up – 120 attendees